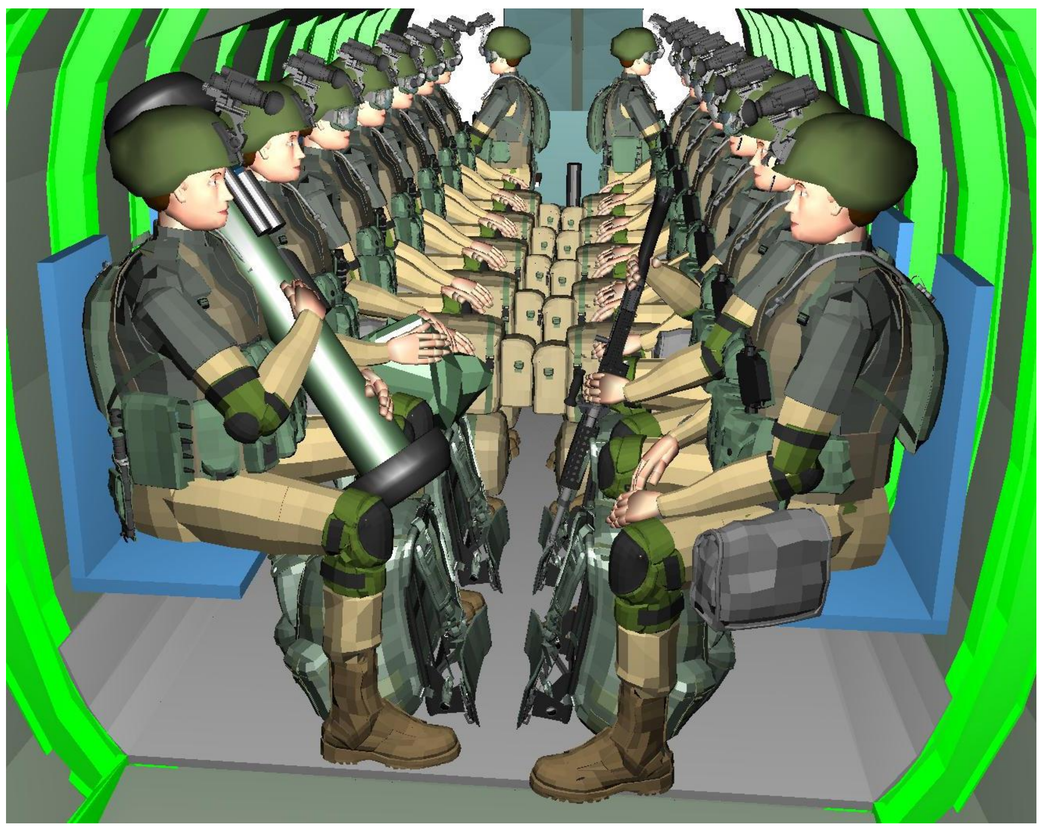
Workspace Analysis - Human Figure Modeling

S&T Campaign: Analysis & Assessment

Rick Kozycki
(410) 278-5880
richard.w.kozycki.civ@mail.mil

Research Objective

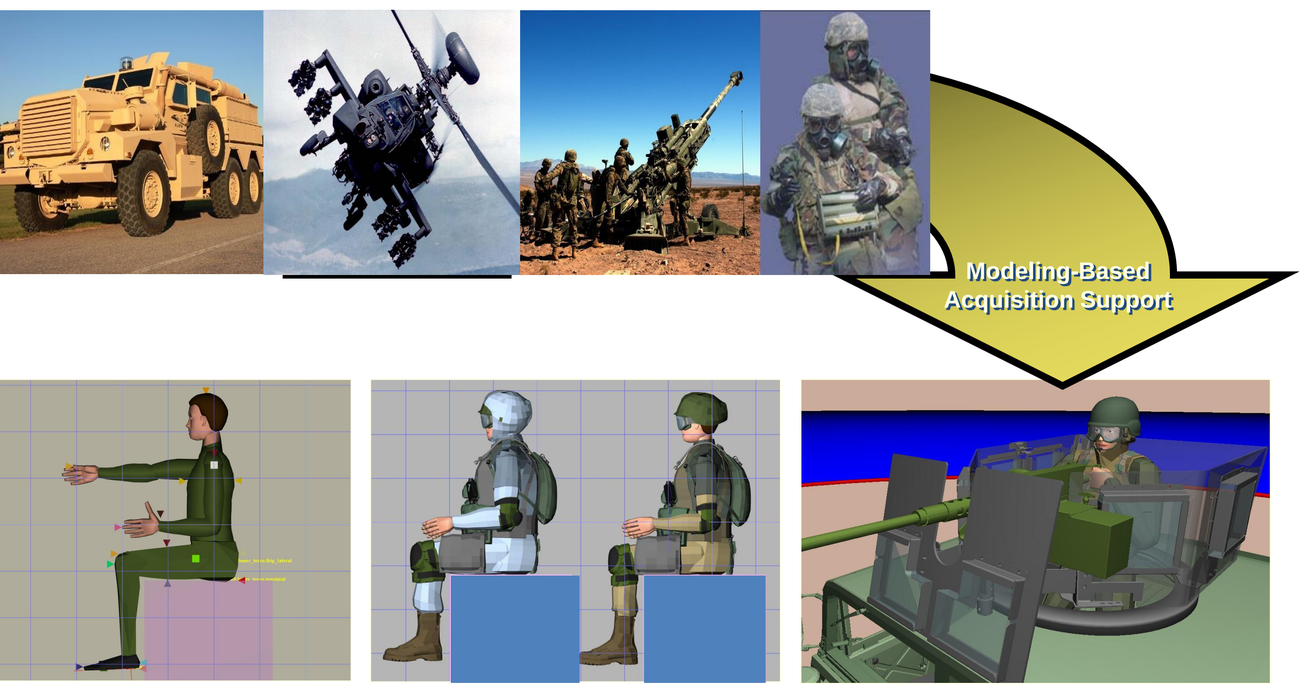
- **Enable early acquisition decisions through the use of workspace design analysis and the development of human figure modeling tools**



Human Figure Modeling Platform Design Analysis

Challenges

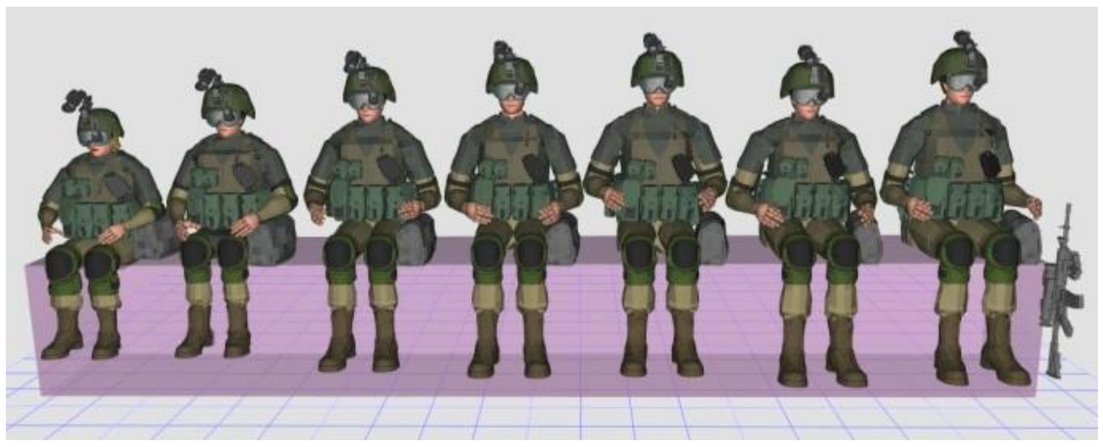
- **Incorporate Systems Engineering (SE) methodology into the development of Human Figure Modeling design and analyses process**
- **Optimize modeling approaches for rapid system design and analysis while balancing model fidelity and accuracy**
- **Develop holistic approach to building military clothing and equipment models best suited for workspace analysis**



Human Figure Modeling Analysis Process

ARL Facilities and Capabilities Available to Support Collaborative Research

- **Software Assessment and Usability Laboratory (SAUL)**
- **Reconfigurable laboratory space suitable for empirical data collection and software assessment and usability tests, located at APG within ARL HRED**
- **Human Figure Modeling Toolset**
  - **Quantify population accommodation, visibility, ground intercepts, ingress/egress**
  - **Evaluate concepts iteratively**
  - **Avoid problems with access to troops (human subjects)**
  - **Evaluate dynamic postures not just static**
  - **Establish system requirements and guidelines**
  - **Evaluate operator and crew workspace**
  - **Refine model predictions and concepts with field tests on best concepts**
- **Assess required maintenance tasks**
- **Human Figure Modeling analysts representing decades of experience and a history of successful system assessment and evaluation throughout the acquisition cycle**



Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- **Human factors experts, systems engineers and software developers interested in tool development, performance modeling, and Systems Engineering methods including 3D CAD design and analysis**
- **Expertise in military-relevant tasks with which to expand the context of workspace design analysis**
- **3D digital modeling equipment expertise and familiarization with model optimization techniques**